# EXPERIMENT FOR OVERFLOW OF ACID TANK

In conclusion to experiment 111490GAS, set up to determine the quantity and concentration of a possible acid tank overflow due to condensation from the Heat Exchangers, the procedures and results are as follows:

In the lab, an actual representation of a situation as described above was set up to simulate the effect. ~~The below visual representation shows the equipment use.~~

DRAWING IF NEEDED

A 50 ml pipette was filled with water and elevated above a 180 ml beaker to produce a gravitation flow system. The 180 ml beaker was then filled with a nitric acid mixture (sample taken directly from an acid tank at 3200). A surgical tubing was then secured in place between the pipette and the ~~180 ml~~ beaker. At this point, the valve of the pipette was cracked open to produce a slow drip affect that would mimic the condensation rate of the heat exchangers. The pipette was filled four times over a 60 hour period.

The results~~, although not as expected,~~ showed that the acid and the water separated out into four distinct regions~~, as shown here:~~

DRAWING IF NEEDED

The top layer, in which we are concerned, was a very diluted acid as apparent from the very light green appearance in comparison to the dark green acid from the tank at 3200. The pH taken of the initial acid was 1.0, while the pH of the overflow from the beaker was 3.0 according to the ColorpHast Indicators used.

This, in effect, shows that a hypothesis can be drawn to conclude that the water will separate from the acid tank at a much lower concentration than the acid contained in the tank with the majority of the contents being water. The concentration of the discharge cannot be determined on the grounds that the tank level and concentration have to be known.